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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,888	09/29/2003	Fred Gehrung Gustavson	YOR920030169US1 YOR.463	7987
21254 7590 04/19/2007 MCGINN INTELLECTUAL PROPERTY LAW GROUP, PLLC 8321 OLD COURTHOUSE ROAD SUITE 200 VIENNA, VA 22182-3817			EXAMINER NGO, CHUONG D	
			ART UNIT 2193	PAPER NUMBER

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/19/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/671,888

Applicant(s)

GUSTAVSON ET AL.

Examiner

Chuong D. Ngo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-9,17-19 and 21-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-9,17-19 and 21-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 2 pages.
- 4) ☒ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1,2,4-9,17-19 and 21-29 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 1,2,4-9, and 21-29 are directed to a computer implementing data manipulation method. Claims 17-19 are directed to a computer readable medium having instruction for implementing the method. In order for such a computer related invention to be statutory, the claimed invention must accomplish a practical application. That is the claimed invention must transform an article or physical object to a different state or thing, or produce a useful, concrete and tangible result. *State Street*, 149 F.3d at 1373-74, 47 USPQ2d at 1601-02. Also see “Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility”, OG Notices: 22 November 2005. It is clear from the claims that the invention merely involves data manipulations for rearranging data of a matrix. The claimed invention does not transform an article or physical object to a different state or thing, and the result produced by the claimed invention is a mere set of data being rearranged from an original data matrix and does not have a real world value, and thus is not a useful, concrete and tangible. Therefore, the claimed invention is directed to non-statutory subject matter for failing to accomplish a practical applications.

Claims 17-19 are also rejected under 35 U.S.C. 101 as being directed to signal carrier which is non-statutory subject matter.

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2. Claims 1,2,4-9, and 21-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claim 1, the claim appears directed to an apparatus, but fails to recite a combination of physical means to define the apparatus. Further, since the body of the claims recite only steps of a method, it is unclear what category the invention belongs. Claims 23,26 and 28 also have the same problem.

As per claim 2, the limitation of the recitation “using a deviation from a normal floating point loading instruction”, lines 5-6, is unclear.

As per claim 28, the recitation “a method of overcoming a hardware disadvantage on said computer relative to a specific processing on a specific computer architecture/set of instructions”, lines 1-3, is indefinite as to what is the “hardware disadvantage”, what is the “specific processing” and what are the “specific computer architecture/set of instructions”. Further, the limitations of the recitations “a first error relative to said specific processing”, line 6, and “a correcting error relative to said specific processing”, line 8, are unclear.

As per claim 29, the recitation “of claim 30” is indefinite as there is no claim 30. It appears to be “of claim 28”.

3. Claims 1,4,17-19 and 21-29, are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Lao et al. (7,031,994).

As per claims 1,4,17 and 21-29 Lao et al discloses in figure 6 an apparatus for perform matrix operation on matrix data in a standard format (Col. 16, line 30), including separating a

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matrix into blocks of size 2-by-2 (Col. 16, line 30); rearrange and storing the blocks of data to be contiguous blocks of contiguous data in a nonstandard format (Col. 16, lines 35-45) as to generate a first error that permits the matrix data to be more quickly moved into a position for performing the matrix operation, and retrieving and loading the nonstandard format matrix in an optimal format for processing (Cols. 16, lines 46-56) as to generate a correcting error as claimed.

As per claim 18, Lao discloses the operation also providing a result data of a transpose of the matrix (Col.16, lines 55-57).

As per claim 19, Lao et al. discloses in col. 16, lines 46-56, a crisscrossing of elements about a diagonal as claimed.

4. Claims 2 and 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lao et al. (7,031,994).

As per claims 2 and 6, it is noted that Lao et al does not specifically discloses the apparatus is an floating point unit. However, since Lao et al does not restrict the matrix operation in to either an integer unit or a floating point unit, It would have been an obvious application to apply the teaching of Lao et al. in a floating point unit as claimed.

As per claim 5, Lao et al. discloses in col. 16, lines 46-56, a crisscrossing of elements about a diagonal as claimed.

As per claim 7, Lao disclose the operation also providing a result data of a transpose of the matrix (Col.16, lines 55-57).

As per claim 8, Lao et al discloses in col. 16, a checkerboard loading technique as claimed.

As per claims 9, since it is well known that LAPACK and BLAS are often required matrix transposition, and because Lao et al. teach a matrix transposition, it would have been an obvious application to apply the matrix transposition of Lao et al. in LAPACK and BLAS as claimed.

5. Applicant's arguments filed on 01/25/2007 have been fully considered but they are not persuasive.

Regarding the rejection under 35 USC 101, Chapter 2106 of the MPEP clearly set forth that in order for an invention that is a 35 USC 101 Judicial Exception such as the data manipulation of the invention as claimed to be statutory, the claimed invention must either transform an article or physical object to a different state or thing, or produce a useful, concrete and tangible result. In making a determination of whether an invention produce a useful, concrete and tangible result, the focus is not on whether the steps taken to achieve a particular result are useful, tangible and concrete, but rather on whether the final result produced by the claimed invention is useful, tangible and concrete. The increasing efficiency recited in the claims may although be an improvement of the inventions, it is not a practical application as defined in the Guidelines. Since the invention as recited in the claims does not transform an article or physical object to a different state or thing, and because the result produced by the claimed invention is no more that a set of data being rearranged from an original data matrix and does not have a real world value, and thus is not a useful, concrete and tangible, the claimed invention is clearly directed to non-statutory subject matter. Further, the recitation "a signal-bearing medium" is clearly to include carrier signal. It should be changed to "a computer

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readable storage medium” in order to exclude a carrier signal.

Regarding the prior art rejection, applicant's arguments are not persuasive because Lao et al clearly discloses in Col. 16, line 30, a separation of a matrix into blocks of size 2-by-2, and in Col. 16, lines 35-45, the rearranging and storing the blocks of data to be contiguous blocks of contiguous data in a nonstandard format as claimed in claim 1, for example. The rearranging clearly permits the matrix data to be more quickly moved into a position for performing the matrix operation recited in Cols. 16, lines 46-56 for obtaining a result data of a transpose of the matrix as claimed in claim 7, for example.

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuong D. Ngo whose telephone number is (571) 272-3731. The examiner can normally be reached on Tuesday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Chuong D Ngo
Primary Examiner
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04/09/2007